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spiritualizing life, letting light into the mind, inspiring and feeding the higher forces of human nature. In this view, the reading-book becomes vastly more than a mere drill-book in elocution; and it becomes of the greatest consequence that it should be rigorously shut up to the best, and not made the idle vehicle of the second best. It must never be forgotten that the days of a child's life are precious: it has no choice within the walls of the school-room. In its hours for reading it must take what we give it. Be sure that the standard which we set in our school reading-books will inevitably affect its choice of reading out of school; that the conceptions which it forms of literature and the ideal life will be noble or ignoble, according as we use our opportunities. It is for us to say whether the American child shall be brought up to have its rightful share in the great inheritance of America."

In the second essay, after pointing out the desirability of teaching nursery classics in school, the author says (p. 41), "The drawback to the use of these nursery classics in the school-room has been in the absence of versions which are intelligible to children of the proper age, reading by themselves. The makers of the graded reading-books have expended all their ingenuity in *grading* the ascent. They have been so concerned about the gradual enlargement of their vocabularies, that they have paid slight attention to the ideas which the words were intended to convey. But just this gradation may be secured through the use of these stories, and it only needs that they should be written out in a form as simple, especially as regards the order of words, as that which obtains in the reading-books of equivalent grade." And this fine passage serves more purposes than one to show why American classics should be read in school: "The common-school system is the one vast organization of the country, elastic, adapted in minor details to local needs, but swayed by one general plan; feeling the force of educated public sentiment, and manipulated by the free, intelligent association of teachers and superintendents. This organization affords the most admirable means for the cultivation and strengthening of the sentiment of patriotism, and it avails itself of it in many ways." We are perfectly safe in taking Mr. Scudder for our guide in the matter of literature in the schools.

Children's Stories of the Great Scientists. By HENRIETTA CHRISTIAN WRIGHT. New York, Scribner. 8°. \$1.25.

THE present volume, which is accompanied by eight good engravings,—portraits of some scientists,—describes the life and work of a number of the most energetic and successful workers in natural science, the author's object being evidently to bring out the lesson taught by their lives, more than to state the results of each one's labor; at least, such we should consider the prime object of biographies of scientists intended for children. In some instances the author has well succeeded in bringing out the instructive part of the lives of these men, and these we consider the best stories contained in the book; but in others a mere compilation of events and discoveries is given, while the character and importance of the man cannot be understood from the description. Among this latter class is, for instance, the chapter on Alexander von Humboldt. Many of the discoveries of physicists as described in the book will hardly be intelligible to children, as they deal with the most difficult problems of science. As an introduction into the history of natural science, the book has, however, a certain merit. The seventeen men whose lives and works are described are the most prominent of the last centuries; and whenever the author pays attention to their struggles and sufferings for the sake of their science, as is done in many cases, the descriptions are suggestive and instructive to the child.

Our Celestial Home. By J. G. PORTER. New York, A. D. F. Randolph & Co. 16°. \$1.

THIS book is written by an astronomer, and is an attempt to prove that heaven is somewhere in the stellar universe, though the author is careful not to say where. He contends, that, according to the Bible, heaven is a material place, and not merely a happy state of existence, and must therefore be somewhere in the universe that we see around us. He gives a chapter to the subject of the immensity of the universe as made known by the telescope, and then considers the question of its stability. Science, he thinks, has

shown the universe to be stable as to motion, but speaks with some hesitation with regard to the forces of heat and light. The earth, he intimates, may one day be destroyed by conflagration caused by collision with some swarm of meteors, thus fulfilling the prediction of scripture. Professor Porter is wholly uncritical in his religious views; for he believes not only in the future destruction of the earth, but also in the literal resurrection of the body, in the doctrine that death is the result of Adam's fall, and much else that liberal Christians of the present day have discarded. Indeed, his book is neither religious nor scientific in the higher sense of these terms, and is not likely to make any impression on intelligent minds.

Soaps and Candles. Ed. by J. CAMERON. Philadelphia, Blakiston. 12°. \$2.25.

THIS little book is one of a series of technical handbooks, of which those already published are on 'Brewing, Distilling, and Wine-Manufacture'; 'Bleaching, Dyeing, and Calico Printing'; 'Acetic Acid and Vinegar, Ammonia and Alum'; and 'Oils and Varnishes.' As in the preceding numbers of the series, the articles in 'Cooley's Cyclopædia' have formed the nucleus to which material has been added from various scattered sources. It is assumed that the reader has some knowledge of chemistry.

Examples in Physics. By D. E. JONES. London and New York, Macmillan. 16°. 90 cents.

As the author well remarks, "it is quite common to find students who have a correct knowledge of the general principles of physics, and can apply it intelligently in making a physical measurement, but who are yet unable to solve an easy problem or to calculate the results of their experimental work." Every one who has been brought face to face with some numerical example in the course of his study of physics has had cause to regret that he has not had more practice in such work, and it is just this opportunity for practice that 'Examples in Physics' is intended to supply in its more than one thousand problems.

NOTES AND NEWS.

THE National Geographic Society signalized the beginning of the second year of its successful work by publishing almost simultaneously with its first meeting of the season Vol. I., No. 1, of *The National Geographic Magazine*. In outward appearance it is as attractive as its contents are creditable to the society, by which it is not only edited, but written. Its outward covering is of the, at present, fashionable brick-color, upon which is printed in plain type the title of the magazine, the seal of the society, and the place of publication. The paper is of good quality, and the typography clean and sharp, so the page is easily read. But the contents are most deserving of praise. Besides the opening announcement, introductory address by the president, proceedings of the National Geographic Society, and facts relating to it, there are six carefully prepared articles. Their titles are, 'Geographic Methods in Geologic Investigation,' by William M. Davis; 'Classification of Geographic Forms by Genesis,' by W. J. McGee; 'The Great Storm of March 11 to 14, 1888,'—two articles, the first a brief one, by Gen. A. W. Greely, and the second a very elaborate study of its entire history, by Everett Hayden. The latter paper is illustrated by six carefully prepared colored charts, upon which is shown graphically almost every known fact relating to this great storm. This paper, with the charts, has also been reprinted in a pamphlet. The two remaining papers are, 'The Survey of the Coast,' by Herbert G. Osgood; and 'The Survey and Map of Massachusetts,' by Henry Gannett. In the introductory announcement the editors say: "The National Geographic Society has been organized 'to increase and diffuse geographic knowledge,' and the publication of a magazine has been determined upon as one means of accomplishing these purposes. It will contain memoirs, essays, notes, correspondence, reviews, etc., relating to geographic matters. As it is not intended to be simply the organ of the society, its pages will be open to all persons interested in geography, in the hope that it may become a channel of intercommunication, stimulate geographic investigation, and prove an acceptable medium for the publication of results. The magazine is to be edited by the society. At present it will be

issued at irregular intervals; but, as the sources of information are increased, the numbers will appear periodically. The national capital seems to be the natural and appropriate place for an association of this character, and the aim of the founders has been, therefore, to form a national rather than a local society. As it is hoped to diffuse as well as to increase knowledge, due prominence will be given to the educational aspect of geographic matters, and efforts will be made to stimulate an interest in original sources of information. In addition to organizing, holding regular fortnightly meetings for presenting scientific and popular communications, and entering upon the publication of a magazine, considerable progress has been made in the preparation of a physical atlas of the United States. The society was organized in January, 1888, under the laws of the District of Columbia, and has at present an active membership of about two hundred persons. But there is no limitation to the number of members, and it will welcome both leaders and followers in geographic science, in order to better accomplish the objects of its organization."

— Lieut. Robert Platt, U.S.N., has been ordered from the Washington Navy-Yard to command the United States Fish Commission steamer 'Fish Hawk.'

— As the stormy season on the North Atlantic approaches, the Hydrographic Office at Washington again reminds navigators, in a note on the November Pilot Chart, of the great advantage to be derived from the use of oil to prevent heavy seas from breaking on board. The forcing of the attention of mariners to this subject, so that now no careful master of a vessel goes to sea without providing for the use of oil in storms, has been one of the most important results of the work of the Hydrographic Office.

— Prof. Harry King of the Geological Survey has returned to Washington from Clark County, where he has been roughing it, much improved in health.

— In the summary of Mr. J. W. Osborne's paper on 'Substances Feebly Sensitive to Light,' which appeared in *Science* of Oct. 26, the fact that it was read before the Washington Philosophical Society was accidentally omitted. In the same issue, by some slip of the pen or types, Mr. J. B. Smith was represented as saying that he had captured and identified *four* distinct species of June-bugs in the District of Columbia. The number was really twenty.

— The titles of the papers read at the meeting of the Biological Society of Washington, Nov. 3, were, 'Fossil Wood and Lignites of the Potomac Formation,' by Mr. F. H. Knowlton; 'Observations on the Modifications of the Gill in Univalve Mollusks,' by W. H. Dall; 'Characteristics of the *Scatophagidae*,' by Dr. Theo. Gill; 'Description of a New Species of *Arvicola* from the Black Hills of Dakota,' by Dr. C. Hart Merriam. Some notice of the first of these papers will be given in a future number of *Science*, if space permits.

— At the second meeting for the season of the National Geographic Society at Washington, Nov. 2, the paper of the evening was presented by Mr. Marcus Baker, on 'Classification of Surveys.' *Science* hopes to give an abstract of this paper in an early issue.

— The Australasian Association for the Advancement of Science held its first meeting in August of this year. The formation of the association was first suggested by Professor Liversidge of the Sydney University, during the exhibition in Sydney in 1879; but, matters at that time not being considered quite ripe for it, the formation of the association was again brought forward through the press in the year 1884. It was then suggested that the first general meeting should be held in Sydney on the one hundredth anniversary of the foundation of the colony, as it was at that time thought there would be an international exhibition in Sydney to celebrate that event. In furtherance of the project, a preliminary meeting of delegates from various scientific societies was held in Sydney in 1886 (November), the project having thus early met with the approbation and support of the majority of the learned and scientific societies of Australasia. At this meeting the formation of the Australasian Association for the Advancement of Science was

agreed to unanimously, the rules of the British Association being adopted until the first general meeting. In accordance with a resolution passed at the meeting of delegates, the election of officers for the year 1888 took place in Sydney in March of the present year: Mr. H. C. Russell, B.A., F.R.S., government astronomer of New South Wales, being elected president; Sir Edward Strickland, K.C.B., F.R.G.S., honorary treasurer; and Professor Liversidge, M.A., F.R.S., and Dr. George Bennett, F.L.S., honorary secretaries. The formation of the general council was afterwards proceeded with, each society electing one representative for every hundred of its members. Practically every society coming within the scope of the association has one or more representatives on the general council. The association is thoroughly Australasian in its character and members, and the succeeding general meetings are to take place in turn in the capitals of the other colonies, the executive officers being elected year by year by the colony in which the meeting is held. It has been decided, however, that Sydney shall be the permanent headquarters of the association, and that Professor Liversidge shall be the permanent honorary secretary. The first general meeting was held at the Sydney University, the opening ceremony taking place on Tuesday evening, Aug. 28, when the presidential address was delivered. On the following day the sectional meetings commenced; and all the sections, with one exception, brought their proceedings to a close with the end of the week. About a hundred and ten papers were sent in by gentlemen of distinction in the various branches of science, literature, and art in the different colonies, and a considerable number of the papers are to be published in full in the first volume, soon to be issued by the association. It may therefore be anticipated that the work done by the association during the first year of its existence is of a highly important and useful character. The more solid work of the meeting was lightened by excursions to various places of interest to geologists, botanists, and others, and every effort was made to provide for the entertainment and comfort of visiting members, numerous entertainments being given by leading citizens. It has been decided that the next meeting shall be held in Melbourne, and Baron Sir Ferdinand von Mueller, the government botanist of Victoria, is the president-elect for the year. In 1890 the association is to meet in New Zealand. The rules are practically the same as those of the British Association, and, at the time of the meeting, the new association numbered about 850 members. It is confidently anticipated that this number will be considerably augmented, if not actually doubled, by the time the next general meeting is held.

— "The learning peculiar to the pedagogue oftentimes brings the pedagogue to contempt." In the 'Second Lessons in Arithmetic' (Houghton, Mifflin, & Co.) we are glad to note that the object of the editor, Mr. H. N. Wheeler, has been to prepare a text-book which, by its method of developing the mind of the learner, by the emphasis that it places on fundamental principles, and by the omission of useless subjects and arithmetical terms known only in the school-room, will meet the wants of those teachers and businessmen throughout the United States who demand that the essentials of arithmetic shall be better taught than heretofore, and that the non-essentials shall be omitted. — Mr. Walter Besant has written a biography of the author of the 'Gamekeeper at Home' and the 'Amateur Poacher'; and this 'Eulogy of Richard Jefferies' will be shortly published in New York by Longmans, Green, & Co. Mr. Besant has a sympathetic and tender touch, and his account of the struggles of unfortunate Jefferies is pathetic and affecting.

— The late Prof. Edward Tuckerman made a choice collection of books and papers relating to lichens, some four hundred numbers in all, which has been presented by Mrs. Tuckerman, in accordance with his own wish, to Amherst College Library. It is proposed to keep the collection by itself, under the name of the 'Tuckerman Memorial Library,' and to make it worthy of the name by making it as complete as possible in its own department. Supposing that some persons interested in this specialty might like to assist in maintaining and completing the collection (with the understanding that it is always available to public use), the librarian of Amherst College, William I. Fletcher, has issued a circular giving opportunity for any who care to do so to contribute, either in money or in material (especially rare monographs that may have escaped

Professor Tuckerman's notice), to this memorial to a model scholar and scientist. Whatever money may be contributed will be kept as a fund, of which only the income will be employed in making additions to the collection, or in repairs and rebinding. The sum of a thousand dollars would probably suffice as such a fund.

— An interesting incident of the statistics showing the social, sanitary, and economic condition of women employed in shops and factories of the United States, which are to be published in Col. Carroll D. Wright's annual report of the Bureau of Labor, is that they were collected by women who were employed as special agents of the bureau for that purpose. More than seventeen thousand women were interviewed.

— Prof. Aug. Kerckhoffs, of Dutch origin, but who has long been settled in Paris as a teacher of languages in a commercial school, will succeed the late Herr Johann Martin Schleyer as head of the Volapükists. Father Schleyer published his first book on Volapük in 1879, and nine years later, at the time of his death, a moderate estimate puts the number of his followers at not less than a quarter of a million persons. Professor Kerckhoffs is the most distinguished of his pupils.

— In *Science*, No. 300, p. 207, line 21, for '110' read '1100.'

LETTERS TO THE EDITOR.

* * Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

The editor will be glad to publish any queries consonant with the character of the journal.

On the Alleged Mongolian Affinities of the American Race: A Reply to Dr. Daniel G. Brinton.

A FEW days ago a paper of Dr. Daniel G. Brinton, entitled 'On the Alleged Affinities of the American Race' (*Science*, Sept. 14, 1888), came to my knowledge.

This paper, which purports to be a refutation of the asserted Mongolian affinities of the American natives, contains, in my estimation, such wrong interpretation of acknowledged facts, and such illogic argumentation, that, although I generally avoid discussions of this kind, I cannot help making an exception this time.

It would be worth while to examine and criticise thoroughly all the arguments brought forward in Dr. Brinton's paper, but a general review will sufficiently show the nature and value of Dr. Brinton's refutation.

Unfortunately, for the present I am compelled to discuss the matter in a rather incomplete way, as I am travelling, and do not have the necessary works at hand from which I should like to quote, in order to prove what I say. I have therefore to make all my statements and quotations from memory.

Let us examine now Dr. Brinton's arguments against the asserted Mongolian affinities of the native Americans, as existing in language, in culture, and in physical peculiarities.

First, as to language. In claiming that there is no linguistic connection between the American and Mongolian languages, which may be true, Dr. Brinton forgets that also in the (his) Mongolian race the various languages are far from showing any connection one with another, and yet he considers the peoples who speak these different languages as being of one race. Moreover, in the Caucasian and negro races of Blumenbach's classification, which Dr. Brinton seems to adopt, widely different languages, not showing the remotest linguistic connection, have been grouped together. For instance: the Basques, the Caucasians proper (of the Caucasus), the Semites, and numerous other groups of peoples, are considered to be of one race, the white or Caucasian. The African negroes, the Melanesians, the Negritos of the islands of south-eastern Asia, and the Australians, are equally regarded as forming another, the black or negro race. Although there is no linguistic affinity between the different groups just mentioned, they are affiliated by physical characteristics, and each forms respectively one great race. As long as we accept this, we have a perfect right to group the Ural-Altaic, and other Mongolian languages, with the native languages of America.

Second, as to culture. Although I am far from professing that ancient American culture has borrowed any thing from Europe, Asia, or Africa, neither do I positively deny the contrary until further evidence.

The science of archaeology, as Dr. Brinton himself admits, only came into being at a comparatively recent date. If this be true of archaeological science in general, it is more so of American archaeology in particular, and we are consequently very far from having exhausted it. The different branches of ancient American culture, from the arid regions of the South-west to Peru, have not yet been studied systematically enough, and in connection with ethnology (as they should be), to permit us at present to draw any certain conclusions as to whether they contain any foreign elements, Mongolian or otherwise.

There is no need whatever as yet of hurrying Americanists, as Dr. Brinton wishes, to recognize the absolute autochthony of native American culture. The coming-forth of truth from studying a branch of science cannot, and never will, be forced: it *grows*, gradually and slowly, in the same proportion as our knowledge increases.

Third, as to physical peculiarities. Putting aside for the present linguistic and cultural affinities between Mongolians and native Americans, to deny that the American aboriginal belongs by his physical characteristics to the Mongoloids is equal to denying that the Basques and the Fins belong somatologically to the white race, or to claiming that the Hottentots and the Negritos do not form branches of the black race.

The comparative study of physical characteristics is perhaps the only satisfactory way of classifying the human races; and, although I cannot deny that any other classification, linguistic or sociologic, has its value and right of existence, we never ought to try to harmonize and to unite them, as is often done. As the different classifications have as many absolutely different points of view, their union can only lead to erroneous estimations. This illustrates, that, even admitting that the languages and cultures of the native American are not Mongoloid or Mongolian, nevertheless the physical peculiarities of these races may be the same.

Before I continue, let me state what I call, on purely somatological grounds, the Mongoloid race. Mongoloids, or Mongolians, in the widest sense, are, to me, a number of zoölogical varieties (*variété héréditaire*, in the sense of A. de Jussien) of the same subspecies or race, distributed promiscuously, and in different proportions (in the sense of Kollman's *penetratio*: see Kollman's studies on European and American anthropology, in *Archiv für Anthropologie* and *Zeitschrift für Ethnologie*), over parts of northern and eastern Europe, the greater portion of Asia, the Indian Archipelago, Polynesia, a part of Madagascar, and originally over the whole American continent with its numerous islands. The term 'Mongoloid,' as I understand it, is in the main synonymous with Oscar Peschel's '*Mongolenähnliche Völker*', and with the '*races jaunes*' of French anthropologists.

The varieties of this great race differ somatologically much less among themselves than the varieties of the white and black races.

I will now consider, one by one, the arguments of Dr. Brinton against the racial relationship between Mongoloids and American natives.

First, as to color. Dr. Brinton forgets, that, in condemning Cuvier for the confusion of the American with the Mongolian race, because he based his racial scheme principally on the color of the skin, he equally condemns Blumenbach, whose division Dr. Brinton first calls 'eminently scientific.' We know that Blumenbach divided mankind into a white, yellow, brown, red, and black race, — a division at least just as much an '*a priori* hypothesis,' as it pleases Dr. Brinton to call Cuvier's divisions. Blumenbach had probably seen just as few pure Mongolians and American natives as Cuvier; otherwise he would not have called the Americans red. True 'redskins' do not exist. The American aboriginal is assuredly more yellow than red.

As far as my own observations among Indians go, in North and South America and in Mexico, and among Chinese, Japanese, and Malays, I have come to the conclusion that they all have the same color of skin, which we might best call yellowish brown, but in a great variety of shades, which often occur among the same people